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PATENT

Docket No. 10191/1735

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Inventor(s): Olaf KUNZ et al.
Serial No.: 09/807,055
Filing Date: July 9, 2001
For: **DEVICE FOR MONITORING A
MEASURING SYSTEM OF AN
ELECTRIC DRIVE**

Group Art Unit: 2837
Examiner: Rita Leykin

Address to:
Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
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3/17/04

Signature:

Richard L. Mayer
Richard L. Mayer (Reg. No. 22,490)

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 1.192(a)

SIR:

Applicants transmit herewith an Appeal Brief Pursuant to 37 C.F.R. § 1.192 (a) for the above-identified application.

Applicants request a two month extension of time to respond to the Notice of Appeal mailed on November 13, 2003 filed on November 17, 2003), resetting the response date to March 17, 2004. The extension fee of \$420.00 should be charged to Kenyon & Kenyon, Deposit Account No. 11-0600.

Please charge the Appeal Brief fee of \$330.00 and any additional fees to Kenyon & Kenyon, Deposit Account No. 11-0600.

Respectfully submitted,

Richard L. Mayer

Dated: 3/17/04

By: Mary C. Weiner, Reg No. 30,333

Richard L. Mayer

Reg. No. 22,490

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Signature: Richard L. Mayet
Richard L. Mayet (Reg. NO. 22,490)

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 1.192(a)

S I R:

In the above-identified patent application ("the present application"), Appellants mailed a Notice of Appeal on November 13, 2003 from a Final Office Action dated May 13, 2003. The Notice of Appeal is believed to have been received by the United States Patent and Trademark Office on November 17, 2003. In the Final Office Action, claims 15 to 29 were finally rejected. An Advisory Action was subsequently mailed on November 6, 2003.

In accordance with 37 C.F.R. § 1.192(a), this Appeal Brief is submitted in triplicate in support of the appeal of the final rejections of claims 15 to 29. For the reasons more fully set forth below, the final rejections of claims 15 to 29 should be reversed.

1. IDENTITY OF REAL PARTY IN INTEREST

The real party in interest in the present appeal is Robert Bosch GmbH, of Stuttgart, Federal Republic of Germany,

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assignee of the entire right, title and interest in the present application.

2. RELATED APPEALS AND INTERFERENCES

There are no interferences or other appeals related to the present application "which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal."

3. STATUS OF CLAIMS

Claims 15 to 21, 25 and 29 stand finally rejected under 33 U.S.C. § 102(b) as anticipated by United States Patent No. 5,469,215 ("Nashiki").

Claim 22 to 24 and 26 to 28 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Nashiki.

A copy of the appealed claims is provided in Appendix A, attached hereto.

4. STATUS OF AMENDMENTS

In response to the Final Office Action, Appellant filed a Reply Under 37 C.F.R. § 1.116 on July 14, 2003. The Reply Under 37 C.F.R. § 1.116 did not include any proposed amendments to the claims.

5. SUMMARY OF THE INVENTION

The present invention relates to a device for monitoring at least one measuring system 12 for detecting at least one measured quantity of an electric drive 10. Specification, page 4, lines 30 to 32. The device includes at least one controller 44 for receiving the at least one measured quantity detected by the at least one measuring system 12 and for generating at least one manipulated variable for controlling the electric drive 10. Specification, page 5, lines 12 to 15. The device includes at least one signal processor 34 for detecting an error in the at least one measuring system 12. Specification, page 9, lines 4 to 7.

In an example embodiment of the present invention, the device includes at least one measuring system 12 configured to detect at least one measured quantity of an electric drive 10. Specification, page 4, lines 30 to 32. The device also includes at least one controller 44 configured to receive at least the measured quantity detected by the measuring system 12 and to generate at least one manipulated variable to control the drive 10. Specification, page 5, lines 12 to 15. The device further includes at least one signal processor configured to detect errors in the measuring system. Page 9, lines 4 to 7.

6. ISSUES

1. Whether Nashiki anticipates claims 15 to 21 and 25 under 35 U.S.C. § 102(b).
2. Whether Nashiki anticipates claim 29 under 35 U.S.C. § 102(b).
3. Whether Nashiki renders claim 22 to 24 and 26 to 28 unpatentable under 35 U.S.C. § 103(a).

7. GROUPING OF CLAIMS

Claims 15 to 21 and 25 stand or fall together with respect to Issue 1.

Claim 29 stands alone with respect to Issue 2.

Claims 22 to 24, 26 to 28 stand or fall together with respect to Issue 3.

8. ARGUMENTS

ISSUE 1 - CLAIMS 15 to 21 and 25

Claims 15 to 21 and 25 stand finally rejected under 35 U.S.C. §102(b) as anticipated by Nashiki. Appellants respectfully submit that this rejection should be reversed for the following reasons.

Claim 15 relates to a device for monitoring at least one measuring system for detecting at least one measured quantity of an electric drive, including at least one

controller for receiving the at least one measured quantity detected by the at least one measuring system and for generating at least one manipulated variable for controlling the electric drive. Claim 15 recites at least one signal processor for detecting an error in the at least one measuring system.

Nashiki purports to relate to a method and apparatus for controlling an electric motor with compensation or torque ripple. The Final Office Action, page 2 remarks that it is the examiners responsibility to interpret claim language as broadly as possible. Appellants submit, contrary to this Final Office Action assertion, that during examination, the claims are to be interpreted only as broadly as their terms reasonably allow. See M.P.E.P. § 2111.01. Appellants submit that independent claim 15 specifically recites the feature of at least one signal processor configured to detect errors in the measuring system.

The Final Office Action does not allege that Nashiki provides this feature, and moreover, Appellants respectfully submit that Nashiki does not provide this feature. Nashiki merely refers to a value of a "a speed error DVL." Nashiki states that a position sensor 8 is connected to a speed sensor 5 for sensing a rotational speed VL based on a rotation position P, and a current command value setting means 13. Nashiki further states that the speed sensor is connected to a subtractor 1 for subtracting the rotational speed VL from a speed command VLC to determine the speed error DVL. Col. 5, lines 2 to 4. Consequently, the variable "speed error DVL" represents a difference between a measured value, i.e., the rotational speed VL, and a command value, i.e., speed command VLC, and does not constitute "an error in [an] at lest one measuring system" or "errors in [a] measuring system." Nashiki fails to disclose, or even suggest, the feature of "at least one signal processor for detecting an error in the at least one measuring system" as recited in claim 15.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art

reference. Verdegaal Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully submitted that Nashiki does not disclose, or even suggest, all of the limitations of claim 15.

As more fully set forth above, it is respectfully submitted that Nashiki does not disclose, or even suggest, a "device for monitoring at least one measuring system for detecting at least one measured quantity of an electric drive, including at least one controller for receiving the at least one measured quantity detected by the at least one measuring system and for generating at least one manipulated variable for controlling the electric drive" as recited in claim 15. Nashiki is also deficient in that it does not disclose or suggest that such a "device includes at least one signal processor for detecting an error in the at least one measuring system" as recited in claim 15. It is therefore respectfully submitted that Nashiki does not anticipate claim 15.

As for claims 16 to 21 and 25, which ultimately depend from claim 15 and therefore include all of the limitations of claim 15, it is respectfully submitted that Nashiki does not anticipate these dependent claims for at least the same reasons given above in support of the patentability of claim 15.

In view of the foregoing, it is respectfully submitted that the rejection of claims 15 to 21 and 25 under 35 U.S.C. § 102(b) should be reversed.

ISSUE 2 - CLAIM 29

Claim 29 stands finally rejected under 35 U.S.C. § 102(b) as anticipated by Nashiki. Appellants respectfully

submit that this rejection should be reversed for the following reasons.

Claim 29 relates to a device and recites that the device includes at least one measuring system configured to detect at least one measured quantity of an electric drive. Claim 29 further recites that the device includes at least one controller configured to receive at least the measured quantity detected by the measuring system and to generate at least one manipulated variable to control the drive. Claim 29 further recites that the device includes at least one signal processor configured to detect errors in the measuring system.

As described above, Nashiki fails to disclose, or even suggest, at least the feature of "at least one signal processor configured to detect errors in the measuring system". For at least this reason, Appellants respectfully submit that Nashiki fails to anticipate claim 29.

Appellants further submit that Nashiki also fails to disclose, or even suggest, a "device including at least one measuring system configured to detect at least one measured quantity of an electric drive, at least one controller configured to receive at least the measured quantity detected by the measuring system and to generate at least one manipulated variable to control the drive" as recited in claim 29. It is therefore respectfully submitted that Nashiki does not anticipate claim 29 for this further reason.

In view of the foregoing, it is respectfully submitted that the present rejection of claim 29 should be reversed.

ISSUE 3 - CLAIMS 22 to 24 and 26 to 28

Claims 22 to 24 and 26 to 28 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Nashiki. Appellants respectfully submit that this rejection should be reversed for the following reasons.

As an initial matter, claims 22 to 24 and 26 to 28 ultimately depend from claim 15 and therefore include all of the limitations of claim 15. As more fully set forth above,

it is respectfully submitted that Nashiki does not disclose, or even suggest, all of the limitations of claim 15, from which claims 22 to 24 and 26 to 28 ultimately depend. It is therefore respectfully submitted that claims 22 to 24 and 26 to 28 are patentable over Nashiki. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988) (any dependent claim that depends from a non-obvious independent claim is non-obvious).

Appellants furthermore submit that the Final Office Action merely alleges that the same "approach" used in rejecting the independent claims is used in the case of "other limitations" and maintains the rejections of the previous Office Actions. Specifically, the Final Office Action alleges that "Nashiki teaching can be applied to a control system for a 3-phase ac motor performing two-to-three phase conversion and further to any other control system for multi-phase, multi-pole motors, dc motors and induction motors." Final Office Action at p. 5. However, these contentions are entirely irrelevant to the patentability of the present claims. In particular, these contentions are entirely irrelevant to the issue of whether Nashiki discloses or suggests the limitations of claims 22 to 24 and 26 to 28, for which the Examiner bears the burden of proof when making such a rejection. Appellants respectfully submit that obviousness cannot be predicated based on modifications that can be made, but rather, the Examiner bears a burden to show that the prior art discloses or suggests a motivation to modify the reference. The mere fact that a reference can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The Final Office Action fails to establish the basic requirements of a prima facie case of obviousness as there is no suggestion or motivation, either in Nashiki itself or in the knowledge generally available to one of ordinary skill in the art, to modify Nashiki or to combine other reference disclosures. Appellants submit that Nashiki fails to disclose or suggest all of the claim limitations.

In this regard, claim 22 recites that "a measuring system model generates at least one expected estimate for the at least one measuring system for providing error detection in the measuring system." The Final Office Action does not even allege that this limitation is disclosed or suggested by Nashiki. Indeed, it is respectfully submitted that Nashiki does not disclose, or even suggest, this limitation.

As regards claim 23, claim 23 recites that "a reversing switch relays an error signal of the at least one signal processor as a function of the at least one expected estimate." The Final Office Action does not even allege that this limitation is disclosed or suggested by Nashiki. Indeed, it is respectfully submitted that Nashiki does not disclose, or even suggest, this limitation.

As regards claim 24, claim 24 recites that "the at least one signal processor is activatable as a function of at least one of a quantity generated by the at least one controller, and another quantity generated by the at least one controller when it assumes at least one of a certain value and a maximum allowed set point." The Final Office Action does not even allege that these limitations are disclosed or suggested by Nashiki. Indeed, it is respectfully submitted that Nashiki does not disclose, or even suggest, these limitations.

As regards claim 26, claim 26 recites that the device includes "a selector device for making a selection between a first error monitoring and a second error monitoring as a function of a selection quantity." The Final Office Action does not even allege that this limitation is disclosed or suggested by Nashiki. Indeed, it is respectfully submitted that Nashiki does not disclose, or even suggest, this limitation.

As regards claim 27, claim 27 recites that "the selector device makes a selection between the first error monitoring and the second error monitoring as a function of at least one expected estimate for the at least one measuring system." The Final Office Action does not even allege that

this limitation is disclosed or suggested by Nashiki. Indeed, it is respectfully submitted that Nashiki does not disclose, or even suggest, this limitation.

As regards claim 28, claim 28 recites that "the measuring system model forms the at least one expected estimate as a function of at least one controller quantity that is at least one of generated by the at least one controller and a function of the at least one controller." The Final Office Action does not even allege that this limitation is disclosed or suggested by Nashiki. Indeed, it is respectfully submitted that Nashiki does not disclose, or even suggest, this limitation.

In rejecting a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, supra. This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As indicated above, it is respectfully submitted that Nashiki does not disclose, or even suggest, all of the limitations of claim 15, from which claims 22 to 24 and 26 to 28 ultimately depend. It is further submitted that Nashiki does not disclose, or even suggest, the additional limitations recited in dependent claims 22 to 24 and 26 to 28, which ultimately depend from claim 15. It is therefore respectfully submitted that Nashiki does not render unpatentable claims 22 to 24 and 26 to 28, which ultimately depend from claim 15.

Moreover, it is respectfully submitted that the cases of In re Fine, supra, and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Final Office Action reflects, at best, a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of In re Fine stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the Final Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the reference to provide the claimed subject matter.

More recently, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a "technologically simple concept" -- which is not the case here -- there still must be some finding as to the "specific understanding or principle within the knowledge of a skilled artisan" that would motivate a person having no knowledge of the claimed subject matter to "make the combination in the manner claimed," stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

Accordingly, there is no evidence that the reference relied upon, whether taken alone, combined or modified, would provide the features and benefits of claims 22 to 24 and 26 to 28, which ultimately depend from claim 15. It is therefore respectfully submitted that claims 22 to 24 and 26 to 28 are allowable for these reasons.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

CONCLUSION

For at least the reasons indicated above, Appellants respectfully submit that the art of record does not disclose or suggest Appellant's invention as recited in the claims of the above-identified application. Accordingly, it is respectfully submitted that the invention recited in the claims of the present application is new, non-obvious and useful. Reversal of the claim rejections is therefore respectfully requested.

Respectfully submitted,

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Dated: 3/17/04

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APPENDIX A
TEXT OF CLAIMS ON APPEAL

15. A device for monitoring at least one measuring system for detecting at least one measured quantity of an electric drive, including at least one controller for receiving the at least one measured quantity detected by the at least one measuring system and for generating at least one manipulated variable for controlling the electric drive, the device comprising:

at least one signal processor for detecting an error in the at least one measuring system.

16. The device of claim 15, wherein the at least one signal processor receives at least one quantity generated by the at least one controller.

17. The device of claim 15, wherein the at least one signal processor receives at least one of a quantity generated by the at least one measuring system and at least another quantity derived from the at least one measuring system.

18. The device of claim 15, wherein the at least one signal processor is operable for comparing a quantity characteristic of the error in the at least one measuring system with a limit value, and for generating an error signal indicating the error in the at least one measuring system as a function of the comparing.

19. The device of claim 15, wherein the at least one signal processor receives a measure of a change in a synchronous generated voltage of the electric drive as a characteristic quantity for the error in the at least one measuring system.

20. The device of claim 15, wherein a signal formed in at least one of a direct-axis current controller, a quadrature-

axis current controller, and an integral component is sendable to the at least one signal processor as a quantity generated by the at least one controller.

21. The device of claim 18, wherein the limit value depends on at least one line parameter that causes a system deviation in the at least one controller.

22. The device of claim 15, wherein a measuring system model generates at least one expected estimate for the at least one measuring system for providing error detection in the measuring system.

23. The device of claim 22, wherein a reversing switch relays an error signal of the at least one signal processor as a function of the at least one expected estimate.

24. The device of claim 15, wherein the at least one signal processor is activatable as a function of at least one of a quantity generated by the at least one controller, and another quantity generated by the at least one controller when it assumes at least one of a certain value and a maximum allowed set point.

25. The device of claim 15, wherein the at least one signal processor includes a comparator for generating an error signal as a function of an output signal of the at least one measuring system and at least one expected estimate.

26. The device of claim 15, further comprising a selector device for making a selection between a first error monitoring and a second error monitoring as a function of a selection quantity.

27. The device of claim 26, wherein the selector device makes a selection between the first error monitoring and the

second error monitoring as a function of at least one expected estimate for the at least one measuring system.

28. The device of claim 22, wherein the measuring system model forms the at least one expected estimate as a function of at least one controller quantity that is at least one of generated by the at least one controller and a function of the at least one controller.

29. A device, comprising:

at least one measuring system configured to detect at least one measured quantity of an electric drive;

at least one controller configured to receive at least the measured quantity detected by the measuring system and to generate at least one manipulated variable to control the drive; and

at least one signal processor configured to detect errors in the measuring system.